MeshKit is an open-source library of mesh generation functionality.

MeshKit has general mesh manipulation and generation functions such as Copy, Move, Rotate and Extrude mesh. In addition, new quad mesh and embedded boundary Cartesian mesh algorithm (EBMesh) are developed to be used. Interfaces to several public-domain tetrahedral meshing algorithms (Gmsh, netgen) are also offered.

This library interacts with mesh data mostly through iMesh including accessing the mesh in parallel. It also can interact with iGeom interface to provide geometry functionality such as importing solid model based geometries. iGeom and iMesh are implemented in the CGM and MOAB packages, respectively. For some non-existing functions in iMesh such as tree-construction and ray-tracing, MeshKit also interacts with MOAB functions directly.

MeshKit is maintained in a world-readable svn repository, located at https://svn.mcs.anl.gov/repos/fathom/MeshKit/trunk/. If you would like to participate in the development of MeshKit, contact Tim Tautges for getting write access to the MeshKit repository, and request an account by browsing https://accounts.mcs.anl.gov/request.php (list Tim Tautges as the account sponsor, and request the SVN/Trac resource).

Documentation

User/Developer's guide, doxygen-generated documentation.
CS&E 2011 presentation on MeshKit 0.9
Binding to Python

Building

Building MeshKit
        How to build MeshKit from scratch, with dependencies, etc.
Building MeshKit for EBMesh
        How to build MeshKit to use EBMesh.
Building MeshKit Python Bindings
        How to build and install the MeshKit Python bindings.

Downloads

Release 0.9RC0 Release candidate 0; not perfect, but getting there!

Mailing lists

There are two mailing lists for MeshKit:

Meshkit-announce (subscribe | archives)
        For general announcements, e.g. releases
Meshkit-dev (subscribe | archives)
        The nitty gritty details, including svn checkin messages

To send a message, send it to meshkit-announce _at_ mcs.anl.gov or meshkit-dev _at_ mcs.anl.gov.

MeshKit-Based Software Services

There are several algorithms and software tools built in <u>MeshKit</u>.

- <u>EBMesh</u>
- <u>Sealing Faceted CAD Geometry</u>
- <u>RGG - Reactor Geometry and Mesh Generator</u>